

PHILOSOPHY

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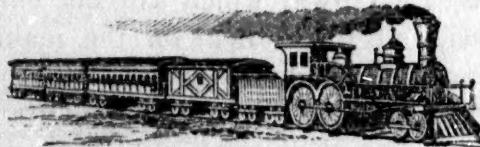
— OF —

RAILROADS.

— BY —

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FIFTH EDITION.



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INTRODUCTION.

This pamphlet was first published in the Winter of 1849-50, at a time when there was not a locomotive within the boundaries of Upper Canada. It was re-printed by several Railway Companies in both Provinces, and was made use of for the promotion of the Great Western, the Grand Trunk and other Railways in Canada, and also in Nova Scotia and New Brunswick. It is now re-published by the promoters of the Ottawa, Vaudreuil and Montreal Railway Company, through the Counties of Prescott and Russell—*the only Counties in the Province of Ontario which have not a mile of Railway*—the only ones where the locomotive is as unknown as it was in the whole Province 20 years ago. Altho' a railway has been proposed for more than twenty years on this the most direct and feasible route between two places of such importance as Montreal and Ottawa, nothing has been done—while, during the same interval, every other County in the Province has secured its railway, and has advanced in proportion. Not content with one Railway, almost every County of Ontario is now engaged in constructing or agitating other lines. Prescott and Russell have now their last opportunity, perhaps, to give efficient impulse to a Railway which will not only take away their reproach, but place them on the main line of the greatest Railway thoroughfare projected in the Dominion—the **PACIFIC RAILWAY**—for which the Ottawa Valley is the necessary route. With a most fertile soil, healthy climate, proximity to the best markets, and valuable forests, these Counties need only a Railway to quadruple their value, and render them as desirable for residence and as attractive to immigration as any in the Province. Without a Railway, in these days, they cannot progress,—for neither will the immigrant come in, nor the most energetic of the native born remain.

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OLD Winter is once more upon us, and our inland seas are "dreary and inhospitable wastes" to the merchant and to the traveller;—our rivers are sealed fountains,—and an embargo which no human power can remove is laid in all our ports. Around our deserted wharves and warehouses are huddled the naked spars,—the blasted forest of trade,—from which the sails have fallen like the leaves of the autumn. The splashing wheels are silenced,—the roar of steam is hushed,—the gay saloon, so lately thronged with busy life, is now but an abandoned hall,—and the cold snow revels in solitary possession of the untrodden deck. The animation of business is suspended, the life blood of commerce is curdled and stagnant in the St. Lawrence—the great aorta of the North. On land, the heavy stage labours through mingled frost and mud in the West,—or struggles through drifted snow, and slides with uncertain track over the icy hills of Eastern Canada. Far away to the South is heard the daily scream of the steam-whistle,—but from Canada there is no escape: blockaded and imprisoned by Ice and Apathy, we have at least ample time for reflection—and if there be comfort in Philosophy may we not profitably consider the

PHILOSOPHY OF RAILROADS.

NEW commercial enterprises, however well supported by dry and accurate statistics, are not often undertaken upon imperfect information—through the representation of theorists or politico-economical writers—or even when supported by bright analogies, and the most authentic records of the success of similar undertakings amongst similar communities. It is true, that well-established systems become the subjects of stock-jobbing and speculation by parties ignorant of their uses or real value; but their origin and maturity are the work of the well-informed few, whose foresight has been rewarded frequently before it has been acknowledged. In older countries the feasibility of public projects and their value as speculations are

more speedily ascertained than in our young and thinly populated Province, and any attempt to transplant a system, or found arguments for the latter from the experience of the former, is at once met with disparaging and "odious" comparisons. The intrinsic merit of the question,—the absolute instead of the comparative value of their own projects,—are not often investigated, because the nature of such investigations are not familiar to us, while they have long since become unnecessary and therefore are not canvassed in those countries where an established system exists.

Thus it is with the Railway System in Canada. We see, and, to our cost, feel its effects around us;—we acknowledge its importance, the great results it has achieved, and the substantial expression of public opinion in its favour in the hundreds of millions which have been freely devoted to its extension in other civilized countries. We have talked about it for years—we have projected a great deal, and done very little, because the public,—the real estate owners large and small,—have not taken up the subject. Our Representatives have lately acquitted themselves nobly in this matter, but they have rather led than followed public opinion, and have themselves been acted upon by a "glorious" minority, to whom the actual and efficient execution has hitherto been confined, and who have contended with the chilling influence of popular apathy, ignorance, and incredulity.

An attempt to investigate the Railway System in its applicability to new countries,—to define its limitations by shewing where and when its application becomes justifiable,—to disseminate popular information upon a too unpopular subject, and turn a portion of that earnest and eager covetousness of foreign prosperity back upon our own neglected resources,—will it is hoped be received with public favour—or at least with public charity.

At the outset it may be objected that there is an insufficiency of disposable circulating capital in Canada, to construct a tithe of the length of the projected Railways, and that *therefore* the discussion is premature. The premises will be admitted to any reasonable extent, but the conclusion, instead of discussion is, we hope to show. premature.

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The population, soil, and wealth of Canada are not inferior to Vermont, New Hampshire, Michigan, Georgia, and other States which have Railways; and the local resources of our Province, where Railroads are wanting, are at least equal to those in Ohio and many other States where these advantages have been enjoyed for years. Whatever is or was the condition of the circulating capital in the States mentioned, they have *found a way* to build their roads. This we believe has been done through the energy and perseverance of the local proprietors of real estate, who have convinced capitalists that they could have no better security for their investments than that contingent upon the certain increase of population, wealth, and traffic, in rising countries like their own;—and thus they have secured improvements from which the land is first to benefit, and without which its value in Canada is stationary; and this too, under circumstances when to stand still is to recede. The projectors of the Welland Canal were not Rothschilds; yet the untiring perseverance of one gentleman secured the construction of a work which for importance has no parallel in America.

There is a greater amount of unemployed capital amongst our agricultural and trading population than is generally supposed; and of fixed capital and absolute wealth there is more than sufficient both to need and to warrant the construction of all the roads proposed. A very considerable class of the Stockholders in New England roads are farmers, with investments from \$50 to \$500.

Railway stocks, unlike most others, are a species of real estate immovably attached to the soil, and have therefore become of late years favourite channels for investment with all classes of capitalists. Banks may fail,—commerce may languish or be partially diverted,—manufactures be rendered unprofitable,—even the earth may for a time refuse to many a return for the capital invested in it; but as long as there are men to profit or to lose by speculations, there will be people to sustain a Railway; and if universal ruin be inevitable, *they* will be the last public works to succumb to the general prostration. The cart road is succeeded by the turnpike, this

again by the macadam or plank roads, and these last by the Railway. The latter is the perfected system and admits of no competition—and this characteristic pre-eminently marks it out as the most desirable object for investment in the midst of an enterprising and increasing population.

With an *assessed* value of above one hundred and forty millions of dollars, and an annual crop, valued at twenty millions of dollars, in Upper Canada alone,—with population, production and wealth, doubling in about ten years, we offer a security upon the industrial character and the increasing wants of a progressive people, for all judicious commercial investments. We therefore believe—although we could not borrow a dollar for any other purpose,—that as the unavoidable customers of a well placed Railway, we have only to secure its receipts to those from whom we ask assistance and take those necessary preliminary steps which none but ourselves can take, in order to obtain the capital required to construct our works. This can scarcely be contested from the experience of the past, because the value of Railway investment is of comparatively recent discovery—and is even now but partially appreciated. Did we not find it so difficult to foresee the inevitable future instead of looking backward, we must acknowledge that with the same future of past progress, there will have taken place in the natural order of things, *before* such works as we propose to consider *could be* brought into perfect operation, such an improved change as is now only demanded by the most incredulous in order to secure their sanction to a Railway system for Canada.

What we need most is that faith in the works themselves which will produce sufficient fruit to bring them with the munificent provisions of our late Railroad Act. It is to present something of the “substance hoped for,” and the unseen evidence required to produce these works, that these remarks have been offered to the public.

The initiative must be taken by us: we cannot expect the accumulated capital of commerce or of older countries to seek out *our* investments. We must do as others do—lay our project

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before the money holders, and show our earnestness and confidence by taking stock to the extent of our means;—but, above all, we must inform ourselves and them fully of the grounds upon which we found our expectations. Zeal and enterprize, directed by a knowledge of our subject, are more rare and efficient commodities than the mere possession of capital; because they will carry capital and all other things with them.

Let us take a case of which Canada (we are proud and sad to say) presents more than one instance. A well cultivated district, in which all the lands are occupied (perhaps by the second generation) with or without water power, but situated twenty to fifty miles from the chief towns upon our great highway, the St. Lawrence, and without navigable water communication with it. The occupants are all thriving and independent farmers, the water power is employed only to an extent to meet their local wants, and the village is limited to the few mechanics, and the one store required for this rural district. The barter of the shopkeeper is restricted by the consumption of his customers, and he becomes the sole forwarder of the surplus product of the district. There is no stimulus for increased production—there are less facilities for it; the redundant population have all been accustomed to agriculture, and as the field for this is unrestricted, they move Westward to prevent a subdivision of their homesteads, and to become greater landowners than their fathers. There exists the well known scarcity of labourers for the harvest, because there is no employment for them during the remainder of the year; and they have not yet been led by necessity to that sub-division of labour, and that variety of employment which are the results of an increasing and more confined population. Each farmer has his comfortable house, his well stored barn, variety of stock, his meadows and his woodland; he cultivates only as much as he finds convenient, and his slight surplus is exchanged for his modest wants. Distance, the expense of transportation, and the absence of that energy which debt or contact with busier men should produce, have prevented any efforts to supply the commercial towns on the part of the con-

tented denizens of our "Sleepy Hollow." To themselves, to the superficial observer, their district has attained the limit of improvement. If they have no water power, or one limited to the supply of the needful grist or saw mill, it is clear to their minds that they were never destined for a manufacturing people; and if they have abundant water power, their local market would not support one manufactory, while land carriage, want of people, money, and more than all, *information*, precludes the idea of their manufacturing for a distant market. It is still more evident, from their position, they are not to become a commercial people, and build up large cities; they, therefore, jog along with evident self-satisfaction—the venerable churchyard is slowly filling up with tombstones—and the quiet residents arrive at the conclusion that they are a peculiarly favoured people in having *escaped* the rage for improvement. They are grateful that their farms have not been disfigured by canals or railroads, and the spirits of their sires troubled by the hideous screech of the steam-whistle.

We will now suppose, (we would that we could more than suppose), that two of our cities should be moved to unite by the iron bond of a Railway, which in its course will traverse the district just described. Excitement prevails in the "Hollow;"—sleep has deserted her peculiar people—the livelong night is passed in mutual contemplation of farms "cut up" or covered over,—visions of bloody skirmishes between "Far downs" and Corkonians,—of rifled gardens and orchards, of plundered poultry yards and abducted pigs. The probable mother of a possible child bewails her future offspring "drawn and quartered" on the rail by the terrible locomotive, and a whole hecatomb of cattle, pigs and sheep, are devoted by imagination to this insatiate Juggernaut. The Engineers who come to spy out the land are met with curses both loud and deep,—the laws of property are discussed,—the delinquent Member for the County denounced,—until a handsome Rodman, by well-timed admiration of Eliza Ann, the rural spokesman's daughter, succeeds in obtaining comfortable quarters for his party, with board, lodging and washing, at 12s. 6d. per week. The work has commenced; the farmer is offered better prices for his hay

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and grain than he ever before received:—even milk and vegetables,—things he never dreamed of selling,—are now sought for; his teams, instead of eating up his substance as formerly in winter, are constantly employed, and his sons are profitably engaged in "getting out timber" for the contractors; he grows a much larger quantity of oats and potatoes than before,—and when the workmen have left, he finds to his astonishment that his old friend the storekeeper is prepared to take all he can spare, to send by the Railroad "down to town."

And now some of the "city folks" come out and take up a water privilege, or erect steam power, and commence manufacturing. Iron is bought, cut into nails, screws and hinges. Cotton is spun and wove, and all the variety of manufactures introduced, because here motive power, rents and food are cheaper, and labour more easily controlled than in the cities, while transportation and distance have by the Railroad been reduced to a minimum. A town has been built and peopled by the operatives—land rises rapidly in value—the neglected swamp is cleared and the timber is converted into all sorts of wooden "notions"—tons of vegetables, grains, or grasses, are grown where none grew before—the patient click of the loom, the rushing of the shuttle, the busy hum of the spindle, the thundering of the trip-hammer, and the roaring of steam, are mingled in one continuous sound of active industry. While the physical features of our little hamlet are undergoing such a wonderful transformation, the moral influence of the iron civilizer upon the old inhabitants is bringing a rapid "change over the spirit of their dreams." The young men and the maidens, the old men and the matrons, daily collect around the cars; they wonder where so many well-dressed and rich-looking people come from and are going to, &c.,—what queer machines those are which they see passing backwards and forwards. They have perhaps an old neighbour whose son had long since wandered off, and now they see him returned, a first-class passenger with all the prestige of broadcloth, gold chains, rings, gloves, and a travelled reputation: the damsels rapidly impress upon "the mind's eye" the shapes of the bonnets, visites, &c., of that superior class of beings who are flying (like angels) over

the country, and *drink in*, with wide-mouthed admiration, the transcendent splendour and indescribable beauty of "that 'ere shawl." All are interested, all are benefitted, *cuique suum*. Is he a farmer? he has a practical illustration of the superior cheapness of transportation by increasing the load—the cart is abandoned for the waggon—for he sees the Railroad, notwithstanding the great cost of the cuttings, embankments, tunnels, bridges, engines, cars, and stations, carrying his produce for a less sum than his personal expenses and the feeding of his horses would amount to. Is he a blacksmith? he determines his son shall no longer shoe horses, but build engines. Is he a carpenter? he is proud of his occupation as he surveys the new bridge over the old creek. Even the village tailor gathers "a wrinkle," as he criticises the latest effort of Buckmaster or Gibb, whilst the unconscious advertiser is swallowing his coffee. Thus curiosity and emulation are excited and the results are discernible in a general predilection for improved "modes." A spirit is engendered which is not confined to dress or equipage, but is rapidly extended to agriculture, roads, and instructive societies, and finally exerts its most powerful influence where it is most needed,—in the improved character it gives to the exercise of the franchise. This right is now enjoyed by too large a class, whose chief contact with public affairs has been limited to an occasional chat with ambitious retailers of dry goods, groceries, hardware, and political mysteries—or to a semi-annual sitting in a jury box, unconsciously absorbing all the virtuous indignation of some *nisi prius* wrangler, whose "familiar face" is shortly after presented to them at the hustings, generously preferring to defend or advocate anything for four dollars per diem and a prospective Judgeship. He is opposed, perhaps, by the public-spirited shopkeeper, who, with mortgages, long credits, tea and tobacco,—aided by a "last call" to all doubtful supporters,—incites the noble yeomanry to assert their rights as "free and independent electors." If the "natives" can overcome these prejudices of local associations, or if the lawyer's "collections" and "notes" are sufficiently diffuse, ten chances to one the greatest talker is elected, and an improved judiciary, instead of an improved country, is the result.

Nothing would be a more powerful antidote to this state of primitive, but not innocuous simplicity, than the transit of Railways through our agricultural districts. The civilizing tendency of the locomotive is one of the modern anomalies, which however inexplicable it may appear to some, is yet so fortunately patent to all, that it is admitted as readily as the action of steam, though the substance be invisible and its secret ways unknown to man. Poverty, indifference, the bigotry or jealousy of religious denominations, local dissensions or political demagogueism may stifle or neutralize the influence of the best intended efforts of an educational system; but that invisible power which has waged successful war with the material elements, will assuredly overcome the prejudices of mental weakness or the designs of mental tyrants. It calls for no co-operation, it waits for no convenient season, but with a restless, rushing, roaring assiduity, it keeps up a constant and unavoidable spirit of enquiry or comparison; and while ministering to the material wants, and appealing to the covetousness of the multitude, it unconsciously, irresistibly, impels them to a more intimate union with their fellow men.

Having attempted to illustrate the influence of a Railway upon a district supposed to have culminated, let us proceed to notice some of the general characteristics of the system before we apply the results of our investigations to our own particular wants.

We are not backward in importing improvements or transplanting systems *which we understand*: at the same time, those which are new to us, we have curiosity enough and distrust enough to challenge until their principles are defined—when, with the materials before him, with a particular individuality, each man arrives at his own conclusions as to the practicability of their proposed application to this country. It is to this broad principle of "common sense," judgment, or whatever you will, we prefer to appeal rather than to the "availability" or elasticity of statistics.

Steam has exerted an influence over matter which can only be compared to that which the discovery of Printing has exer-

cised upon mind. These two great discoveries,—pillars of cloud and fire which have brought us out of the mental wilderness of the dark and middle ages,—have combined to supply the mind with daily food and illustrate the value of time.* Men have now virtually attained antediluvian longevity; ideas are exchanged by lightning—readers and their books travel together but little behind their thoughts—while actors, materials, scenes and scenery are shifted with the rapidity and variety of the kaleidoscope.

The extraordinary expansion of the Railway System, within the last thirty years, is to be ascribed to the improved appreciation of the Value of Time; since it is *now* universally admitted, that distances are virtually shortened in the precise ratio in which the times occupied in passing over them are diminished.

SPEED, ECONOMY, REGULARITY, SAFETY, AND CONVENIENCE, —an array of advantages unequalled—are combined in the Railway System. These we will notice separately.

The importance of **SPEED** in the transport of goods is annually increasing; even now the more valuable descriptions of merchandize take the rail in preference to the slower and cheaper route by canal; and since the cost of transport upon a Railway varies in an inverse proportion with the business of the road, it is annually becoming less, so that economy of time and economy of transport are becoming less and less antagonistical, and are approaching each other so rapidly, as to render the establishment of any line of demarcation exceedingly difficult if not impossible.

ECONOMY.—Compared with all other land communications, their capabilities may be inferred from the consideration that a horse usually draws from fifteen to thirty hundred weight on a good turnpike or macadamized road (exclusive of vehicle), four to six tons on a plate rail tram road, and fifteen to twenty tons on an edge rail including the waggons;—the friction on a level Railway being only from one-tenth to one-seventh of that upon the roads above mentioned. If this be the effect of the

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rail alone, it is needless to enlarge upon its power when travelled by an iron horse, with which hunger and thirst are but metaphorical terms, which knows no disease nor fatigue, and to which a thousand miles is but the beginning of a journey, and a thousand tons but an ordinary burthen.

But it is in a more extended sense than the mere *cost* of transport that the economy of the Railway is vindicated. While upon the best roads travelled by horses, the cost and time of transportation increases rapidly with the distance, it is clear that there is a point from whence the transport of certain articles becomes unprofitable or impracticable. Milk, fruits, and vegetables, for immediate use, will not bear ten or twelve hours jolting over fifty miles of the best turnpike to reach a market; while fresh meats, fish, eggs, cattle, pigs, and poultry, lumber, staves, shingles, and firewood, and many other necessities of life, either could not afford the time or the cost of a hundred miles transport by horse-power. The production of these articles, therefore, is very limited in certain districts: but wherever a Railway takes its track their extensive production becomes at once a new element of wealth, and the Locomotive a public benefactor—making “two blades of grass grow where only one grew before.” Thus the essence of a Railway system is to *increase its own traffic*, adding twenty-five per cent. to the value of every farm within fifty miles of the track doubling that of those near it, and quadrupling the value of timbered lands through which they pass. Railroads are in one respect more economical carriers than canals, in as much as they are both freight and toll receivers, and are therefore content with one profit.

REGULARITY.—The superior speed and safety of Railway travel over the most expeditious water communications are scarcely more important than its extraordinary regularity; to which latter circumstance it is chiefly owing that in every country has been selected for the transportation of the mails. This monopoly of mails and passengers enables them to transport goods proportionally cheaper—thus becoming powerful rivals to the most favourable water communications. From this principle of regularity, Railways in the winter season have

no competitors ; and, working the whole year round, without delay of lockage, wind or tide, fog, frost, or rain, they, with a full business and fair "grades," can compete with ordinary canals in price, while they can make two trips to one on the canal, in less than half the time.

SAFETY.—The comparative safety of Railway travel with that upon steamboats is best appreciated by the reflection, that the causes which endanger human life upon the former are limited to collisions or leaving the track—both to be avoided by ordinary care ; whereas in the latter, explosion, fire, collision, or wrecking, are attended with imminent risk to all, the only choice often being—the *mode* of death. Explosion of a locomotive boiler, besides being exceedingly rare, is scarcely ever attended with any danger to the lives of the passengers. The remarkable safety of well managed Railways may be further illustrated by the statement of Baron Von Reden, that upon the Railways of Germany only one person in every twelve and a quarter millions of passengers was killed or wounded from defective arrangements of the road, one in every nine millions from his own misconduct, and one in every twenty-five millions from his own negligence. The Germans are undoubtedly a prudent people.

CONVENIENCE.—The convenience of the Railway System lies chiefly in its adaptation to its peculiar traffic ;—artificial navigation is restricted to favourable ground and supplies of water, but modern improvements have enabled the Locomotive to clamber over mountains and penetrate the most remote corners of the land ; there is therefore no limit to the number of its auxiliary branches, which can be multiplied and extended until their ramifications give the required facilities to every wharf and every warehouse—to the solitary mill or factory, or to the most neglected districts as an outlet to otherwise worthless products.

Having noticed some of the characteristics of Railway we for the present will proceed to examine their capabilities as rivals or auxiliaries to canals and rivers,—their winter operation,—their effect upon manufactures,—the comparative merits of long and short lines,—“through” and “way” travel—and other advantages or peculiarities.

We have said that Railroads, with fair grades and a full business, can compete successfully with ordinary canals. We do not mean that any Railroad can compete with canals connecting long lines of navigable waters such as we have in Canada, where the canals are of a size to prevent transhipment or the navigation so sheltered as to permit boats to be towed its entire length; but we do believe, that wherever a transhipment is unavoidable and the Railroad is called upon to transport from one end of the canal route to the other, it will, with ordinary grades, be found the most eligible. We make this comparison assuming that a paying rate of tolls be placed upon the canals as well as on the road, and we base it upon the consideration that the road can do all which the canal would do, and a great deal which the latter would *never* do, viz., carry passengers, mails, fruits, vegetables, milk, fish, &c., which would never take the canal; and that it would be in operation when the canal was useless. This assertion involves the capacity of Railroads, and it is not difficult to prove that a Railway would transport far more in a twelvemonth, than the majority of the English or American Canals and some of our own. It would be unfair to select such very imperfect navigations as the Rideau for a comparison, because, having no towing path the attendance of tug boats is required with every barge or fleet of barges, the lockage of which is an additional delay, while its employment is a heavy expense; and because the absurd size of the Grenville locks nullifies half the capacity of those upon the Rideau. We will therefore take the best Canal and Railroad in America, and see what they have done. The number of tons which arrived at tide water by the *Erie Canal*, was in the years

1850—1,554,675	}	Total 4,708,351 tons of 2,000 lbs.
1851—1,508,667		
1852—1,644,999		

On the Reading Railroad the coal alone which was brought down to tide water was, in the years

1850—1,423,977	}	Total 4,679,973 tons of 2,240 lbs.
1851—1,605,084		
1852—1,650,912		

The difference in estimating the tonnage gives over 500,000 tons in the three years in favour of the Railway.

The length of the Erie Canal is 363 miles—opening to the Great West.

The length of the Reading Railroad is 95 miles of double track—opening to a coal district.

The freighting capabilities of a Railroad will be better understood, by giving a short account of the road which we have just compared with the Erie Canal.

This road employs above one hundred locomotives, and over five thousand freight cars; it has six side tracks at the Delaware Terminus, and seventeen wharves in that river, with a double track upon each; a storage for one hundred and ninety-five thousand tons of coal, and room for the simultaneous lading of ninety-seven vessels of seven hundred tons burthen each. Three or four engines are constantly employed in distributing cars to their respective wharves, and the Company's principal workshop employs several hundred men. An engine upon this road has drawn one hundred and fifty iron coal waggons in one train, of one thousand two hundred and sixty-eight tons weight, over a distance of eighty-four miles in eight hours and three minutes. The cost of the road has been \$17,000,000; the gross earnings in 1852 were \$2,480,629, and the net earnings \$1,251,908. Of the gross earnings, \$2,150,977 were for freight upon coal. The annual cost of transporting coal per ton over the whole distance of ninety-four mile, including the expense of bringing back the empty cars, was *thirty-five and four-tenths cents*, or about one shilling and ninepence currency; being three and three-fourth mills per ton per mile. At this rate the cost of transport of a barrel of flour the length of the Erie Canal (363 miles) would be about sevenpence halfpenny, which is about the actual cost to the carrier on that Canal. Of course no tolls to the road are included.

We will not go so far as to say that a Railway could now compete with an established work having such wonderful advantages as the Erie Canal, but we feel confident with the

present experience in these works that if the Canal were not in existence and a choice of communication were now to be made, the Railway would be selected. The lateral Canals of the State of New York it must be remembered, do not pay any dividends; the receipts and disbursements being about equal notwithstanding the great advantages which they derive from their connection with the Erie Canal. The extraordinary extent of sheltered and inland navigation in America render the Canal system more applicable to this country than to many others, but it cannot be denied that the mania which followed the unparalleled success of the Erie Canal induced an extension of the system into districts, particularly in the more northern climates, where the Railway would have been more applicable.

It is the assertion of the best authorities and the result of the best experience, that freight and travel upon every highway are quadrupled in a remarkably short space of time by the construction of a Railway.

Canada loses every year, by the want of Railroads and a winter market, enough to construct fifty miles of Railway. If we look at the price of flour for the last six years, we will see that it has been highest in the winter months (from October to May); and we have not forgotten when in 1847, we with nearly half a million of barrels of flour for exportation in Montreal alone, were regaled with accounts of winter sales at double the usual rates, in Boston, New York, and other Atlantic ports, from which *for the want of Railways alone* we were shut out,—not even having the privilege of paying the American duty.

As soon as the Western farmer secures his crop his whole time is required to get in the new one before the frost,—for he sows fall wheat. Necessity alone makes him thresh out and take a portion of his grain to market. The winter is his idle season—then is his most convenient time for threshing and bringing his produce to sale. The Eastern farmer sows spring wheat, but as the snow forms his best and cheapest road,—the winter is also his proper time for coming to market. The same is the case with the farmer in the back Townships who has no summer road—he must wait for the snow and frost to bring out his grain to the best advantage. The chief part of their pro-

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duce, therefore, lies on their hands with that on those of the miller until the ensuing season. Our mills must therefore stand still because like the bees we are sealed up in the winter, idly consuming the fruits of our summer's industry. With a Railway we could make flour in winter of a better quality, and cheaper proportionally, because we have more time, cooler weather, and cheaper transport of the wheat—while our chances of high prices would be better, and risk of souring less.

Nothing would tend more to the extension of Manufactures, particularly the numerous and valuable ones of Wood,—the only description we would for some time export,—than the existence of Railways;—nothing would more rapidly build up, what every country should have, *a home market*—place the consumer near the producer—keep our surplus population at home—promote the growth of wool,—the cultivation of hemp,—the settlement of waste lands,—the employment of our unlimited water power,—and the expansion of national enterprise.

If we would *now* have manufactories, (cotton for instance,) we must lay in our winter stock of raw material in November and allow our manufactures to accumulate until April or May before they can be distributed; while in New England, the train which takes up the wool to the water power upon Monday, returns with the manufactures of that wool in the same week. These quick returns beget small profits, with which under our system it is vain to attempt competition. When we consider the amount of unprofitable capital "winter killed,"—the loss of winter prices on the seaboard,—the cost of transport by wagons,—the feeding of horses, and the rate paid in the towns for a scant supply of articles, valueless in the country, we repeat again,—Canada loses by the want of Railroads and winter markets enough to build fifty miles of Railway every year.

It is the estimate of the most competent authorities, that a Railway of ordinary length draws to its support, from the inhabitants of any district through which it passes, a net income of between ten and fifteen shillings per head on the total population tributary to it. The net earnings of the Massachusetts Railways exceed sixteen shillings and three-pence per head for each inhabitant of that State. The New

ose of the therefore the winter, . With a quality, and time, cooler the our chan- less. manufac- tures, Wood,—the t,—than the illy build up, place the con- at home f hemp,—the our unlimited erprise. for instance,) in November April or May gland, the train upon Monday, the same week. which under our hen we consider ed,"—the loss of transport by wag- d in the towns country, we re- roads and winter y every year. authorities, that support, from the it passes, a net per head on the earnings of the llings and three- State. The New

York and Erie Railroad passes for 425 miles through a grazing country, with a population of 532,000 persons, supposed to be dependant upon it, and the estimate of net earnings per head upon this route (*founded upon the experience of those portions in operation*) is twelve shilling and sixpence per head.

The articles for which the Erie Railroad is an outlet are chiefly the products of a grazing country—milk, butter, cattle, calves, sheep and pigs. Of the former article, milk, so important is the business, that a special train known as the "milk train" is run each morning for the supply of the citizens of New York, whose daily wants are thus administered to from cows feeding beyond the Shawangunk Mountains, and drinking the waters which flow into the Delaware.

The little commonwealth of Massachusetts, with an area of seven thousand five hundred square miles, and a population of about eight hundred thousand, has expended \$50,000,000 in building one thousand miles of Railway, the most important of which now yield to their enterprising projectors an average of seven per cent.

Railroads have changed the usual system of doing business. Many Western dry goods merchants have abandoned the old method of laying in spring and fall supplies. Weekly invoices of goods are brought in by the Railroad,—quick returns are made,—the newest patterns are secured,—no dead stock is allowed to accumulate,—and the saving in time, in interest, in depreciation and loss from too large or unsuitable a stock, more than compensates for any extra cost of transport by Railway—a mode which is known to be preferable for certain descriptions of merchandize.

In conclusion—as a people we may as well in the present age attempt to live without books or newspapers, as without Railroads. It is instructive to view the grounds upon which these projects are undertaken in countries where their operation is understood. In projecting the Petersburg and Shirley Railroad, in Massachusetts, the "friends of the enterprise" take up the townships through which the road would pass, and thus "calculate":—

"Townsend has 7,000 acres of wood and timber land, averaging from forty to fifty cords per acre. After supplying fuel for home consumption, we estimate the actual growth to be equal to one cord for every three and a half acres, per annum, which will be 2,000 cords for market, exclusive of sawed lumber and ship timber.

"The north easterly part of Shirley, the north part of Lunenburg and the west part of Pepperell, together with the towns of Brookline, Mason and Ashby, have an aggregate of wood and timber land, nearly or quite three times as large as that in Townsend, and quite as heavily covered.

"The town of Sharon has now a steam mill that cuts one million feet of sawed lumber annually. This town and Temple, having large quantities of wood land, and being too far from a depot at West Townsend for the transport of wood, will therefore do the coal business that is now done in the towns below them—and this branch of business will furnish at least three thousand tons of transport to the road annually.

"It is a well-known fact that the towns of New Ipswich, Temple, Mason, and Ashby, are rich in agricultural resources, and will supply much tonnage of produce to the road. It is not unfrequent for farms in Mason to grow 1,000 bushels of potatoes each (weighing about $37\frac{1}{2}$ tons), for the starch factory in Wilton, present average prices about twenty-two cents per bushel. This article could be transported to West Townsend much easier than to their present market, and the average price in Boston is such as to command this business.

"The manufacturing interest in this section is also well known to be somewhat extensive. The present transport of casks of all kinds from Townsend to Boston is \$6,750 annually. Brookline has this branch of business to nearly the same amount of freight, and both of these towns have much unimproved water power, and great facilities for brick making, much of which is in the immediate line of the contemplated road."

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Have we no farms which grow 1000 bushels of potatoes each? no saw-mills cutting 1,000,000 feet per annum? The writer knows one establishment in Canada which cuts more than 40,000,000 feet annually. There is a large growing trade along the whole extent of our frontier in this article,—which we can produce *ad libitum*, and the whole value of which is from labour applied here. Our exports of sawed lumber to the United States will probably double, i.e. 1849, those of any former year, amounting to more than one hundred millions of feet :*—Railroads alone will bring out the distant reserves of this article.

Have we no facilities for brickmaking, or do we still continue to import bricks from England as we did a few years since? The truth is,—men have starved upon the richest soils and in the finest climes, as in India, Ireland, or Mexico, while the children of the "Pilgrim Fathers" have grown rich from their granite, their wood, and their ice:—they see "sermons in stones," and wealth in shoepins at two dollars a bushel. The chief elements of the extraordinary success of the Americans are such as we in a great measure possess, although we have obtained them too recently to have yet experienced their effects, viz., the control of our own trade,—and *facility of association*,—hitherto hampered by legislative requirements at every step.

The habit of association in New England (for there it has become a *habit*, as we trust it will soon be here), is the prominent instrument in their prosperity. In a mistaken love of sole proprietorship (in imitation of the wealth of the Mother Country), we either do not move at all in a promising enterprise, because the investment is beyond our reach, or we place our necks in the halter by borrowing to such an extent, that the first "pull up" invariably produces strangulation. If we would but contemplate the almost illimitable powers of association for manufacturing or commercial purposes, compared with the largest individual efforts, we would be forced to acknowledge the existence within ourselves of a mine of wealth and power, unheeded now, but which, if relieved from

* Note.—The mills in the City of Ottawa alone can export more than 200 millions of feet per annum.

the pressure of indifference and incredulity, will expand into useful activity. In a town of but moderate population, the humble mechanic may have his house lighted with gas and supplied with water—luxuries which the Seigneur in his lordly country mansion cannot aspire to.

Perhaps the most striking instance of great results from small contributions is the penny post;—but everywhere examples meet us—in the news-room—in public baths—and even in the factories of New England, many of which are owned by the operatives and small farmers.

Mr. W. Harding, in his "Facts bearing on the Progress of the Railway System," read before the British Association in August, 1848, says:—

"No limit can be assigned to the number of travellers which cheapening and quickening the means of conveyance will create. The introduction of the Railway, even where Steamboats already afforded a most pleasant, rapid and cheap communication, increased the number of travellers (between Glasgow and Greenock) from 110,000 to 2,000,000—2,000,000 being *five times* the population of the district. In 1814 the number of passengers per annum between Glasgow and Paisley was only 10,000. In 1842 the number was upwards of 900,000;—the *population* during this period has only doubled itself, while the *traffic* has multiplied itself ninety-fold—that is to say, for every journey which an inhabitant of Glasgow or Paisley took in 1814, he took forty-five journeys in 1843 The Railway System has doubled itself in three years. The importance and value of the traffic in goods and *cattle*, relatively to the passenger traffic, have become more apparent..... Whatever falling off in dividends there may have been, is to be attributed to the *capitalization* of loans, and the creation of fictitious capital by the purchase of Railways at premiums, and therefore at sums beyond what they cost."

In 1836 Massachusetts became a Stockholder to the extent of \$1,000,000 in the Western Road, and by three subsequent Acts issued State scrip for \$4,000,000 more, for the same

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object. The City of Albany gave for the same purpose \$890,425—the amount subscribed by private Stockholders only being one-third of the cost of the road. Georgia, Michigan, Delaware, States all inferior to Canada, have been equally liberal. They could not wait for the overflowing of accumulated capital, to seek out these projects. They considered the State "but one wide extended charity to aid, protect and benefit each other"—the patron of the public good. Massachusetts looked upon the Western as a State work; and upon the interest of the people at large as paramount to any individual or corporate ones which might desire this work. Canada must so consider Railways from her seaport to the heart of her Western territory. The towns and cities on the route contain sufficient commercial intelligence and wealth to lend their credit for a large portion of the stock, and if the agricultural interests hold back, their representatives should be further appealed to. An hundred thousand pounds may be obtained by pledging the honour and the industry of a corporate town, where five thousand could not be spared by the *individuals* composing that town;—because the interest only will be required,—of the burden of which the road upon completion will relieve them, and at the same time undertake the extinguishment of the principal.

Upon the same principle with still less inconvenience, the Canadian people at large, through their Government, may with equal propriety and benefit, procure the means for constructing any eligible line of Railway, by paying, for two or three years, the deficient interest on its cost. But it is highly desirable that wealthy inhabitants and corporate towns and bodies should take the lead and management. The Government stand ready under the late Act to second their efforts—and we have no doubt would advance a step further to meet private action, rather than see a deserving project fall to the ground.

We cannot any longer *afford* to do without Railroads. Their want is an actual tax upon the industry and labour of the country. Men may talk, says an eminent New Englander,

palities have taxed themselves within the last two years, is highly creditable to their intelligence, and a proof that self-taxation for local improvements is not considered a burden. Port Hope, with a population of 2,500, has subscribed £50,000 to her Railway—taxing herself over \$6 per annum on each person. Toronto has given £100,000 to the Guelph Road, and £50,000 to the Simcoe and Huron Line. There must be something in a system which induces towns and countries to make such *apparent* sacrifices;—but the truth is, that taxation for Railway purposes is, in every sense, a highly profitable investment. A county subscribes £1,000 or £1,500 for every mile of the road within its boundaries. By this means it secures the importation of double this sum *to be expended* within that county. Every man soon feels that of the vast expenditure of money called for by the Railway, a portion finds its way into his pocket, which is many times greater than the Railway tax he consents to pay. The great bulk of the cash expended on Railways here, must be imported—and by getting the charters—by organizing the Companies and taking stock as far as our means allow, we lay the foundation of a property destined to increase in value annually—and one which, while it is of inestimable benefit in a thousand direct and indirect ways to ourselves, is also one which capitalists are eager to take up and complete.

Lastly—we are placed beside a restless, early-rising, “go-a-head” people,—a people who are following the sun Westward, as if to obtain a greater portion of daylight:—we cannot hold back—we must tighten our own traces or be overrun—we must *use* what we have, or *lose* what we already possess. Capi-

two years, is proof that self-dered a burden. Subscribed £50,000 annum on each Guelph Road, and There must be land countries to is, that taxation highly profitable £1,500 for every by this means it expended within the vast expendi- portion finds its greater than the bulk of the cash—and by getting and taking stock of a property one which, while direct and indirect lists are eager to

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WHAT ONTARIO HAS DONE FOR RAILWAYS.

Thirty-one Municipalities in Upper Canada—Counties, townships, towns and villages, borrowed \$5,594,400, from the Municipal Loan Fund, and invested it in Railway Stock and Loans. The subscriptions were in many cases out of all proportion to the subscribers, *but they secured the roads*, and there was then no other means by which the necessary capital could have been raised. The Loan Fund being "played out," and the need of railways being felt greater than ever, the bonus system has been resorted to with marvellous success. The Municipalities give bonuses generally to the extent of five thousand dollars per mile, and the land-owners and residents, as well as outside capitalists, are thus induced to subscribe for stock to an equal amount, and are content to wait for dividends, because for one dollar subscribed, the capitalist obtains virtually two dollars stock—while the local proprietors, land-owners and farmers, obtain an immediate return from the increased value of their property, and enhanced price of their products. With ten thousand per mile cash, the Bonds of the Railway can be floated to the extent of five thousand dollars per mile more, and thus the roads are secured.

The following statement shows that about two and a half millions of dollars have thus been already *given* by Ontario Municipalities, to six only of the new railways—within the last two or three years. A large additional sum is pledged to

in the County of Prescott, have given from \$100,000 to \$1,000,000 each, in addition to a County Bonus of \$300,000.

ONTARIO BONUS RAILWAYS.

Toronto, Grey and Bruce Railway.

	Amount of Bonus given.	No. of Acres Assessed.	No. of Rate- payers Assessed.	Assessed value of Real Estate.
Toronto City.....	\$250,000	4,885	14,914	\$18,197,687
Alton Township.....	40,000	56,436	960	856,139
Caledon.....	45,000	68,825	886	655,550
Mono.....	45,000	69,729	666	291,157
Amaranth.....	80,000	46,756	885	138,760
Luther.....	20,000	65,908	908	1,9,774
Arthur.....	35,000	65,275	688	476,886
Orgeville Village.....	15,000	1,825	198	98,530
Mount Forest.....	20,000	670	268	184,440
Grey County.....	300,000	1,008,901	10,424	4,758,180
Total.....	\$795,000			

Toronto and Nipissing Railway.

Toronto City.....	\$150,000	4,885	14,914	\$18,197,687
Bearboro Township.....	10,000	43,092	887	1,152,068
Markham.....	30,000	67,975	1,358	2,071,335
Uxbridge.....	50,000	54,834	908	564,882
Scott.....	10,000	40,297	656	907,973
Brock.....	80,000	66,417	718	460,748
Eldon.....	44,000	61,682	516	923,297
Bexley.....	15,000	28,601	81	70,405
Somerville.....	15,000	50,634	166	100,326
Laxton, Digby and Longford.....	12,000	51,057	171	73,200
Total.....	\$896,500			

Wellington, Grey and Bruce Railway.

Hamilton City.....	\$86,000	2,307	5,129	\$10,839,478
Pearl Township.....	40,000	73,472	1,049	604,395
Maryboro.....	40,000	56,315	760	823,381
Wallace.....	25,000	45,554	541	207,172
Minto.....	70,000	71,047	749	434,450
Howick.....	20,000	69,540	953	405,100
Nichol.....	10,000	26,878	668	785,680
Elora Village.....	10,000	1,000	632	213,375
Fergus.....	10,000	1,000	248	271,915
Bruce County.....	250,000	636,739	7,773	8,796,206
Total.....	\$561,000			

Muskoka and North Grey Railways.

Toronto City	\$100,000	4,585	14,914	\$18,197,687
Barrie Town	30,000	2,100	759	412,458
St. Vincent Township	62,500	65,400	728	588,812
Collingwood "	32,500	68,681	657	286,041
Euph. asia "	27,000	72,000	420	282,300
Total.....	\$252,500			

Whitby and Port Perry Railway.

Whitby Town	\$30,000	8,800	550	\$68,001
" Township	5,000	81,473	671	916,940
Reach "	20,000	62,498	1,880	919,437
Total	\$55,000			
	\$2,445,000			

RAILROADS OF THE WORLD.

COUNTRIES AND STATES	LENGTH	TOTAL COST.	Cost per mile.
North America	49,801	\$2,267,001,818	\$45,523
West India Islands	445	722,849,22	• 50,348
South America	1,424	165,728,562	116,882
Europe	61,048	8,952,890,863	135,159
Asia (containing R. R.)	4,474	414,788,564	92,709
Africa	588	54,987,917	94,288
Australia	789	77,852,188	96,088
Aggregate in world	118,559	\$11,455,104,879	\$96,619

RAILWAYS IN CANADA.

Ontario	1,407	\$107,816,774	\$75,844
Quebec	575	48,016,519	74,811
N. Brunswick	226	6,954,282	30,771
Nova Scotia	145	6,955,178	47,969

begun ten years ago with only eight millions per annum, in that time brought out over 450,000,000 of feet.

The Brockville and Ottawa Railway carries about fifty millions feet per annum.

These three Railways have brought out over one thousand million feet of lumber—over one million of tons within the last ten years.

The value of this traffic is shown from the fact, that while on the Grand Trunk the receipts from freights are less than half than from passengers, on the Northern and Brockville and Ottawa, they are three times, and on the Midland *four and a half times* greater.

The following statement shows the character of the business on the Midland Railway:—

STATEMENT SHOWING TONNAGE OF THE PRINCIPAL ARTICLES OF FREIGHT.

	1867.	1868.	1869.	1870.
Square Timber, cubic feet.....	64,878	75,883	11,278	788,640
Sawed Lumber, feet B. M.....	71,892,050	72,502,050	64,043,450	71,225,600
Wheat, bushels.....	246,277	200,640	262,636	249,752
Other Grains, bushels.....	173,427	128,407	131,447	151,914
Flour and Oatmeal, bushels.....	49,812	36,987	44,567	26,394
Potash, barrels.....	287	164	184	158
Pork, barrels.....	1,510	2,642	8,880	1,218
Other Freight, tons.....	16,966	17,681	15,296	19,540
Total No. of tons carried.....	197,324	190,000	176,448	195,608

EARNINGS.

Freight	\$193,698 83
Passengers	48,210 01
Mails	8,948 88
Total	\$242,157 23

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ARTICLES OF FREIGHT.

1860.	1870.
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64,048,450	71,225,600
262,626	249,752
131,447	151,914
44,567	26,334
184	158
8,889	1,318
15,296	19,540
174,448	195,000
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borne in mind, that by the greater part of the products, a greater portion of the territory of the United States is devoted to agriculture, and that the markets for the products are either a narrow belt of country lying immediately upon the sea coast, and extending north from Baltimore,—or in Europe; and that, consequently, the whole surplus product of the interior has to be sent to the sea coast. We have no interior markets, which can only be supplied by the existence of large manufactoryes, or commercial cities or communities. The surplus of the Southern States is cotton; in the Northern States, corn, wheat and domestic animals. All these articles must be sent from 50 to 1,000 miles to market, as the case may be; and where the production is so enormous as it is in this country, it is easy to see that an immense traffic must be thrown upon all the avenues connecting the interior with the sea coast.

From the difficulty of constructing good *earth* roads, the economic limit to transportation is confined, upon such, to a comparatively few miles, depending of course upon the *kind* of freight and character of the roads. Upon the average of such ways, the cost of transportation is not far from 15 cents per ton per mile, which may be considered as a sufficiently correct estimate for the whole country. Estimating, at the same time the value of wheat at \$1 50 per bushel, and corn at 75 cents, and that 33 bushels of each are equal to a ton, the value of the former would be equal to its cost of transportation for 330 miles, and the latter, 165 miles. At these respective distances from market, neither of the above articles would have any commercial value, with only a common *earth* road as an avenue to market.

But we find that we can move property upon a railroad at the rate of $\frac{1}{2}$ cents per ton per mile, or for one-tenth the cost upon the ordinary road. These works therefore extend the economic limit of the cost of transportation of the above articles to 3,300 and 1,650 miles respectively. At the limit of the economical movement of these articles upon the *common highway*, by the use of railroads, wheat would be worth \$44.50, and corn \$22.27 per ton, which sums respectively would represent the actual increase of value created by the interposition of such a work.

30	"	"	.....	49 05	24 30	45 00	—
40	"	"	.....	48 90	24 15	43 50	18 75
50	"	"	.....	48 75	24 00	42 00	17 25
60	"	"	.....	48 60	23 85	40 50	15 75
70	"	"	.....	48 45	23 70	39 00	14 25
80	"	"	.....	48 30	23 55	37 50	12 75
90	"	"	*	48 15	23 40	36 00	11 25
100	"	"	.....	48 00	23 25	34 50	9 75
110	"	"	.....	47 85	23 10	33 00	8 25
120	"	"	.....	47 70	22 95	31 50	6 75
130	"	"	.....	47 55	22 80	30 00	5 25
140	"	"	.....	47 40	22 65	28 50	3 75
150	"	"	.....	47 25	22 50	27 00	2 25
160	"	"	.....	47 10	22 35	25 50	75
170	"	"	.....	46 95	22 20	24 00	00
180	"	"	.....	46 80	22 05	22 50	
190	"	"	.....	46 65	21 90	21 00	
200	"	"	.....	46 50	21 75	19 50	
210	"	"	.....	46 35	21 60	18 00	
220	"	"	.....	46 20	21 45	16 50	
230	"	"	.....	46 05	21 30	15 00	
240	"	"	.....	45 90	21 15	13 50	
250	"	"	.....	45 75	21 00	12 00	
260	"	"	.....	45 60	20 85	10 50	
270	"	"	.....	45 45	20 70	9 00	
280	"	"	.....	45 30	20 55	7 50	
290	"	"	.....	45 15	20 40	6 00	
300	"	"	.....	45 00	20 25	4 50	
310	"	"	.....	44 85	20 10	3 00	
320	"	"	.....	44 70	19 95	1 50	
330	"	"	.....	44 55	19 80	00	

The above table is chiefly valuable in this connection in showing that, from want of domestic markets, and cost of transportation upon

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42 00	17 25
40 50	15 75
39 00	14 25
37 50	12 75
36 00	11 25
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31 50	6 75
30 00	5 25
28 50	3 75
27 00	2 25
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connection in showing
transportation upon

articles of a similar character. The difference between the value of a pound of raw and manufactured cotton is measured frequently by dollars, yet both may pay the same amount of freight. Wheat, corn, cattle and lumber, all pay a very large sum for transportation in proportion to their value.—*Railway Journal*.

WHAT THEY DO FOR LAND OWNERS.

Not only have the railroads largely increased the radius of the country which pours its produce into the city marts, but they have diffused the city population over a larger surface, in both ways creating the traffic on which the stockholders rely for profits on their investments. Boston affords a case in point; the increase of its population in the ten years ending in 1851 having been 65 per cent., while that of seven towns, each within five miles of the city, and accessible by railroad, was 81 per cent. Great as is the increase of passenger traffic on all the railways, it is exceeded in proportion by the increase of freights. In this respect the experience of Massachusetts tallies with that of South Carolina, and with that of the Erie Railroad.

The advance in the value of land in the vicinity of railroad lines, is another very beneficial result of their construction. This is nowhere more marked than on the Illinois Central Road, where lands which had so long remained unsold at the Government minimum price have realized \$15 per acre, and others which have been sold at \$2 and \$3, now readily obtain purchasers at \$6 and 9.

In comparing roads running through strictly agricultural districts in this country and in England, we are struck with the immense disparity of cost. Thus, while the Southern Michigan line, 245 miles in length, was put into operation at an expenditure of but about \$20,000 per mile, the Eastern Counties Line, an English road, 322 miles in length, including branches, cost the enormous amount of \$200,000 per mile, or ten times as much for the English as for the American line, while the receipts of the latter in September last were \$113,215, against \$300,005 for the English road.—*Railway Times*.

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A very natural question arises here as to the cause of the annual falling off in the tonnage of that kind of property which has hitherto been one of the most prolific sources of revenue. That the quantity of high-toll goods moving westward, is rapidly increasing annually, cannot be denied. The only reason, then, that the quantity passing by the Canal is decreasing, must be that other modes of transportation are deemed more favourable, as involving less expense, either in time or money, or both. Among other articles of up-freight, such as sugar, iron, steel and merchandize, there has been a slight increase from the figures of 1851, while there has been a decrease in molasses, coffee, nails, spikes, crockery and glassware to a considerable extent. In down freight, in flour, beef, butter, cheese, wool and sundries, there has been a decrease, which is, however, easily accounted for.

It will be seen that the Central Railroad have transported an immense quantity of these articles of produce which have decreased on the Canal. They have carried 75,099 bbls. of flour, nearly 10,000 bbls. of beef, and over 3,000,000 pounds of butter during the year.

BUFFALO AND ROCHESTER RAILROAD.—The following table shows the leading articles carried by the Buffalo and Rochester Railroad going beyond Rochester, and principally destined for Albany and New York, during the year 1852:—

Flour, bbls.	75,099	Wheat, bush.	8,750
Pork "	4,639	Corn "	3,499
Beef "	8,208	Oats "	...
Ashes "	529	Barley "	1,798
Whisky "	4,461	Rye "	2,824
Leather, rolls	3,029	Butter, lbs.	3,018,300
Hides, No.	16,814	Cheese "	563,950
Hogs, live	111,659	Lard "	515,650
" dressed	14,609	Tallow "	49,000
Horses, No.	592	Bacon "	1,383,000
Cattle "	14,607	Wool, bales	19,763
Sheer "	9,440	Pelts "	2,706

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During 1851, during the past year 1852, they have transported nearly 100,000 tons. The freight earnings of the road for the months of November and December, 1852, exceed those of the same period in 1851, by about \$78,791,091. The exact number of tons shipped, and the tons landed, it has been impossible to procure separately.

There are some interesting facts noticeable in the table of articles carried by this road. For instance, in dairy products, it will be seen that the railroad has carried three times as much butter as has been sent forward by canal, and the same may be said of cheese, lard, tallow, &c., the holders of those articles of produce preferring that they should reach an early market even at higher rates of freights. It will also be noticed, that immense quantities of live stock have been transported by the railroad; also, flour and other articles. During the present season, the attempt has been made at transporting dressed hogs from the west to the east, to be packed in the latter market, and large quantities have been sent on, but we fear, from the mildness of the season, that those engaged in the enterprise have lost by the operation.

HOW RAILROADS CATCH FISH.

(From Mr. W. Harding's "Progress of the Railway System.")

This traffic is of the greater importance, as it gives a positive addition to the supply of food in the country, and is therefore of great national benefit. Railways stimulate the production, or economize the cost of production, of grain, meat, and other articles of food; but all fish that can be carried inland, is so much added to the resources of the country. In this respect, Railways have done much and can do more, both for the supply of food to the country, and for the promotion of the fisheries.

This traffic is very remunerative, and does not bring less than 10s. per ton. The gross tonnage carried on the English Railways may be reckoned at 70,000 tons; or, on the lowest computation, the food of as

1845.....	236,000	1,200,000	550,000	£102,000
1846.....	370,000	1,250,000	850,000	167,200
1847.....	500,000c	2,000,000	*390,000	183,400

*Falling off caused by Irish famine.

The total number of horses carried in 1847 was 99,405, and the receipts £80,216.

Taking the saving by conveyance of cattle on Railways at 40 lbs. per beast, 8 lbs. for sheep, and 20 lbs. for swine, the gross saving in 1847 will be 43,800,000 lbs. of animal food.

Large quantities of dead meat reach the London market by Railway from the country : it comes in excellent condition from Scotland. By means of Railways, great quantities of hind quarters of mutton are sent up from the country—as the butchers there kill large quantities of sheep and sell the fore-quarters at home amongst their own population—sending the hind quarters by Railway to London. It is the general opinion of butchers, that country killed meat is better than town killed meat. It is ordered and sold by telegraph, and is not damaged by the journey, even in hot weather.—*Evidence given in late Report on Smithfield Market.*

PROGRESS OF RAILWAYS IN UNITED STATES.

Year.	Miles.	Year.	Miles.
1835	1,098	1853	15,360
1836	1,273	1854	16,729
1837	1,497	1855	18,517
1838	1,913	1856	22,017
1839	2,302	1857	24,508
1840	2,818	1858	26,968
1841	3,535	1859	28,789
1842	4,056	1860	30,633
1843	4,185	1861	31,250
1844	4,377	1862	32,120
1845	4,633	1863	33,170
1846	4,930	1864	33,908
1847	5,599	1865	35,085
1848	5,996	1866	36,827
1849	7,365	1867	39,276
1850	9,021	1868	42,250
1851	10,982	1869 (estimated)	50,000
1852	12,908		

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	Miles
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.....	22,017
.....	24,508
.....	26,968
.....	28,788
.....	30,635
.....	31,256
.....	32,120
.....	33,170
.....	33,908
.....	35,083
.....	36,827
.....	39,270
.....	42,250
.....	50,000